

10. Irregular flowers adapted to insects which do not light have changed visitors.

11. Small, closely-crowded flowers do not tend to become zygomorphous.

12. Small, closely-crowded, irregular flowers are liable to lose their zygomorphous characters, unless the stamens and styles are protected by galeæ, carinæ, etc.

Carlinville, Ill.

Proceedings of the Botanical Club.

WEDNESDAY, AUGUST 15, 1888.—The Botanical Club of the A. A. A. S. was called to order by the President, David F. Day, who spoke a few words of welcome and good cheer. Considering the time, the attendance was excellent. In the absence of the Secretary, Prof. V. M. Spalding, Rev. William M. Beauchamp was elected Secretary *pro tem*.

Mr. Thomas Meehan read a paper on the elasticity of the filaments in Compositæ. Mr. Meehan pointed out the elasticity of the filaments of a few Compositæ in 1883, and brought the matter before the Association in 1884, when some questions were raised whether it was not irritability rather than elasticity that caused the behavior.¹ He now adds that the filaments of a large number of Compositæ are elastic (*Heliopsis* exhibits it most clearly), and describes an observation upon *Helianthus doronicoides* which shows that it is not irritability.

Mr. W. H. Seaman followed with some remarks upon the variation of *Azalea nudiflora* in respect to odor and viscosity. This species, when growing in high latitudes and on mountains, is quite viscid and odorous, while in lower ground and more southerly stations it is smoother and nearly odorless.

Mrs. H. L. T. Walcott corroborated the observation in regard to the species about Medford, Mass.

Mr. Meehan read a second paper upon gyno-dioecious Labiatae. He added to the already-known species *Nepeta grandiflora*, a native of the Caucasus, and pointed out the differences between the hermaphrodite and pistillate plants. In the former the heads of flowers are more numerous, but less fertile, the flowers are much larger and more loosely spicate and the internodes longer. Mr. Meehan thought the

¹See this journal, vol. ix, p. 158.

less fertility of the hermaphrodites due to lessened opportunities for the pistils to obtain nutrition rather than to defective pollination. The cause of the tendency to abort the stamens in many Labiatae he thought scarcely identical with that which causes gyno-dioecism. Mr. Meehan's papers will appear in full in the Proceedings of the Philadelphia Academy. After discussion, the club adjourned.

THURSDAY, 9 A. M.—The club was called to order by the President. About thirty present. W. H. Hale, chairman of the committee appointed, made a report adverse to the formation of a botanical section. The report was adopted.

A letter was read from Mr. J. D. Rockefeller inviting the club to visit his grounds, which, being largely natural, might be of interest. As it was impossible to spare the time, the club instructed the Secretary to express their thanks for the kind invitation and regrets that they were unable to accept it.

Mr. Meehan moved the appointment of a committee to draft resolutions on the death of Dr. Asa Gray. The chair appointed Messrs. Meehan, Barnes and Kellicott.

Mr. Beauchamp called the attention of the club to living specimens of *Erythræa Centaurium* which he had brought for the use of the members from the original station at Oswego, N. Y. He then read a paper upon the Onondaga (Indian) names for plants, in which he enumerated the names of the chief plants known to these Indians, and gave their signification.

Mr. Meehan spoke on the tendency to irregularity in the tubifloral Compositæ. In *Silphium perfoliatum* and many other Compositæ two of the five lobes of the corolla are approximated to form an "upper lip," and three to form a "lower lip." The gynœcium is also frequently involved in this irregularity, and instead of being straight bends against the lower lip even when to do so it has to oppose the action of gravitation.

Dr. E. L. Sturtevant exhibited a large series of water-color drawings to illustrate the variability of the fruit of wild and cultivated species of *Capsicum*, a genus which he thinks contains but a few species, instead of the many which have been described.

Mr. B. E. Fernow endeavored to answer the question, "What is a tree?" by proposing a definition for the term. After showing the looseness of present definitions and the need of greater precision in the use of the word, he defined trees as woody plants, the seed of which has the inherent

capacity of producing naturally within their native limits one main erect axis not divided near the ground, the primary axis continuing to grow for a number of years more vigorously than the lateral axes, and the lower branches dying off in time.

The definition was objected to, and a lively discussion ensued, participated in by several members of the club, which the last speaker summed up by saying that we should still have shrubby trees and arborescent shrubs.

FRIDAY, 9 A. M.—The club met in the hall of general sessions. Upon motion, the President appointed as a committee to nominate officers for the ensuing year Messrs. Scribner, Barnes and Meehan. The committee to draft resolutions upon the death of Dr. Asa Gray reported the following, which were adopted by a unanimous rising vote:

Resolved, That the Botanical Club of the American Association for the Advancement of Science sincerely regrets that, meeting as it does but once a year, it should be among the last of similar associations to place on record its sense of the great loss which the whole world of science suffers by the death of Prof. Asa Gray.

Resolved, That, though among the last to contribute to the wreath of sorrow with which science everywhere is crowning the memory of Dr. Gray, this body takes a mournful pride in remembering that he was one of its honored members, and that it was as a botanist he won such eminent renown. We feel that we have a right to be among the chief of mourners at his departure from the field of labor he loved so well, and in a special degree to unite in sympathy with the many thousands who miss him everywhere.

Resolved, That copies of these resolutions be forwarded to the family of our deceased friend, and given to the botanical and other scientific journals for publication.

THOMAS MEEHAN,
C. R. BARNES,
D. S. KELLICOTT.

A paper by Dr. Geo. Vasey upon the "Characteristic Vegetation of the North American Desert" was read by Mr. Tracy, and illustrated by a number of lantern views of plants exhibited by Dr. E. P. Howland. This paper will appear in full in the GAZETTE.

Mr. C. R. Barnes spoke on the acridity of *Arisæma triphyllum*. Following up a suggestion in a note by Stahl in the *Biologisches Centralblatt* (see this journal, p. 24), experiments were made to determine whether the acridity of the expressed juice of the corm could be removed by filtering out the raphides. After one filtration the acridity was almost lost, while upon a second filtration the juice was entirely bland. It would seem likely, therefore, that the intense burning sensation was due to the penetration of the

mucous membrane of the mouth by the raphides, though this has not yet been crucially tested.

Mr. Lazenby mentioned the fact that the corm of *Calla* was less acrid than the petioles, and that it contained smaller quantities of crystals.

Mr. A. A. Crozier sent a paper on the secondary effects of cross-fertilization, which was read by Mr. Cowell. He had crossed many varieties of apples and other fruits to determine whether any effect appeared in the fruit of the first year, but his experiments led to the belief that it did not.

Mr. Cowell dissented from this view as contrary to his experience.

Mrs. Henrietta L. T. Walcott described and exhibited specimens of an amber-fruited choke-cherry, collected in Dedham, Mass. The chief differences are in the somewhat broader leaves, three or four times shorter and more compact racemes, and the amber-colored fruit. Dr. Sereno Watson proposes for it the varietal name *leucocarpa*.

Mr. W. R. Lazenby exhibited the two forms of *Ampelopsis*, one of which adheres to brick or stone walls, trees, etc., by means of the disk-like expansion on the tendrils, and the other of which will *not* climb walls and forms no disks. The latter is the only one sold by nurserymen, and much disappointment ensues from its failure to clamber over walls.

Mr. Beauchamp disagreed with Mr. Lazenby, and thought the tendrils were modified to suit circumstances.

Dr. Campbell suggested that the nursery plants were *A. hederacea* of Europe, and not *A. Virginiana*.

On Friday afternoon at 2 o'clock about forty members of the club boarded a special Brooklyn-line car, and, after a pleasant ride across the city, alighted at Brighton, where a few minutes' walk took them into a wild glen, with numerous side ravines cutting into it. The region was not specially remarkable botanically, but served to give a fair idea of the August flora of the country. *Jeffersonia diphylla* was collected in fruit, and proved to be a rarity to eastern botanists. The mycologists gathered the richest collection, but all brought in some plants of interest. At 5:30 the car was found awaiting the party, and an hour's ride brought them again to their lodgings. These short excursions are among the pleasantest features of the Association, and serve to promote the friendly intercourse which is perhaps as important and beneficial as the information gained. The club feel

under special obligations to the local botanists who perfected the arrangements and did so much to make the trip pleasant.

MONDAY, 9 A. M.—The club was called to order by Dr. W. J. Beal, in the absence of the President.

Mr. Joseph F. James exhibited a series of forms of *Dentaria laciniata* and *D. multifida*, and held that the latter should be considered as a variety of the former. He also showed an abnormal form of *Asclepias tuberosa* with flexuous stem and sub-opposite leaves, which he thought entitled to the varietal name, *flexuosa*.

Mr. F. L. Scribner gave some observations on nomenclature. He read an extract from a letter of Dr. Hackel (see page 243) on the citation of authorities. He stated the objects of citation to be two, viz., to fix the species meant and to furnish a clew to the literature. The following case was cited: Pursh described *Stipa membranacea*; Thurber, ignorant (as almost every one was) of Pursh's name, called it *Eriocoma cuspidata*; it turns out to be an *Oryzopsis*; ought Scribner to go back to Pursh's specific name, *membranacea*, or is he right in calling it *Oryzopsis cuspidata* Scrib.?

The general topic awakened discussion. Mr. Barnes contended for the indivisibility of a plant name and the citation in lists, etc., of a single author after it, without any intention of "giving credit."

Mr. James and Mr. Beauchamp thought the author of the specific name ought to be cited in parenthesis, a proceeding the uselessness of which either for reference or "credit" was pointed out by Mr. Scribner.

Mr. F. L. Scribner also read a paper on *Sphærella Fragariæ*, the strawberry leaf-blight. As a justification for the formation of the common name, he stated the principle adopted by the section of vegetable pathology. The diseases or injuries caused by *Ramularia*, *Cercospora*, etc., are called "blight;" those caused by *Uredinæ* are "rust;" those due to *Phyllosticta*, *Septoria*, etc., are "leaf-spot." The author enumerated and remarked on the fungi thought to represent the stylosporic form of *Sphærella*. He has found the spermatogonial stage, he believes, which is quite distinct from *Septoria aciculosa*. We therefore know all three stages of the *Sphærella*.

Mr. Meehan spoke on the functions of the peduncular bract of *Tilia*. He thinks it is, among other things, for the purpose of holding up the peduncle so the flowers will not hang too close together, and also to bring them under the leaves so that bees can work at them in wet weather.

Mr. D. H. Campbell spoke of the germination of *Marsilia Ægyptiaca*. Of spores from herbarium specimens eleven years old, fifty per cent. germinated, and of those five years old, almost all grew. From 10-12 hours suffices for the germination and complete formation of male and female prothallium.

The committee for nominating officers for the ensuing year reported, naming for President, T. J. Burrill, of Champaign, Ill.; for Secretary and Treasurer, D. H. Campbell, of Detroit. They also recommended the establishment of the office of Vice-President, and nominated B. D. Halsted, of Ames, Iowa. The report was adopted and the officers elected.

Dr. Vasey sent to the club a report of progress of the Botanical Exchange Club. (See p. 240.)

TUESDAY, 9 A. M.—W. R. Lazenby spoke of the flora of Ohio, referring chiefly to that of Franklin county, which showed 714 Phanerogams, and not a single Ericad.

F. L. Scribner made some remarks concerning *Andropogoneæ*, referring to Hackel's forthcoming work. [This paper will be published later in the GAZETTE, together with citations of herbarium numbers, so as to make it immediately available to American botanists.—Eds.]

Changes in host plants, induced by *Puccinia graminis*, were discussed in a paper sent by V. M. Spalding. The leaf where affected is three times as thick as elsewhere. In wheat the epidermal cells are often enlarged and ruptured. Contents of cells show chlorophyll bodies decomposed. He referred also to the changes in the grain.

M. B. Waite spoke of changes in the fungus flora near Champaign, Ill.

W. J. Beal gave an account of the flowering plants of Northern Michigan.

Abstracts of the botanical papers read before section F of the A. A. A. S., at the 37th meeting, Cleveland, Aug. 15-22, 1888.

A plea for uniformity in biological nomenclature: by N. L. BRITTON.

The paper cites the discrepancies in the application of the law of priority in the binomial and trinomial citation of organisms and urges a method to secure uniformity.

[Dr. Britton is absent in England, and his paper did not reach the section. As only the above extract was read, there was no discussion.]